

ABSTRACT

A light-emitting panel comprises a plurality of non-housed LED chips and a foil which covers a plurality of LED chips so as to protect them from outside influences and to influence at least in part the light emitted by the LEDs, for example converting its frequency. The foil is a conversion foil or a diffuser foil, i.e. it contains fluorescent dyes and/or diffusers. The fluorescent dye (also called conversion dye) and/or the diffusers are embedded in a first laminated structure. A second laminated structure is arranged on the side of the first laminated structure that faces the light-generating elements. All the layers of the first laminated structure and all the layers of the second laminated structure have a similar refraction index. On the contrary, there is a substantial difference between the refraction index of the layers of the first laminated structure and the layers of the second laminated structure. The refraction index of the layers of the first laminated structure is low, for example lower than 1.5, and the refraction index of the layers of the second laminated structure is as high as possible, for example higher than 1.5. The transition between a boundary layer of the first laminated structured and a boundary layer of the second laminated structured is not flat but rather has boundary surfaces which form an angle to the lamination plane or are possibly corrugated. According to another aspect of the invention, non-housed LED chips may be covered with a sheath which contains the conversion dye.

(Figure 1)